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A COMPARATIVE STUDY OF VARIOUS PROJECT HEAD START PROGRAMS.

BY- HARDING, JOHN
STATE UNIV. OF N.Y., ITHACA

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A FULL-DAY, YEAR-LONG, EXPERIMENTAL NURSERY SCHOOL PROGRAM FOR POOR CHILDREN FROM THE ITHACA, N.Y. AREA WAS CONDUCTED TO OBTAIN INFORMATION ON THE OPERATION OF THIS TYPE OF PRESCHOOL EXPERIENCE FOR THREE- AND FOUR-YEAR-OLD CHILDREN OF POOR FAMILIES AND TO DETERMINE SOME OF THE EFFECTS OF THE PROGRAM ON THE CHILDREN. THE CHILDREN WERE TESTED WITH THE PEABODY PICTURE VOCABULARY TEST AND THE STANFORD-BINET IN OCTOBER OF 1965 AND IN APRIL OF 1966. THE RESULTS SHOWED A SIGNIFICANT INCREASE IN THE IQ SCORES OF THE CHILDREN BETWEEN THE TWO TESTING PERIODS. SUMMER HEAD START PROGRAMS WERE CONDUCTED IN THE DRYDEN, NEWFIELD, AND ITHACA, N.Y. AREAS IN 1965. A FOLLOWUP STUDY ON 74 OF THE 77 HEAD START CHILDREN WAS DONE DURING THEIR KINDERGARTEN YEAR. DURING THE SECOND AND SEVENTH WEEK OF EACH OF THE THREE SUMMER PROGRAMS, THE CHILDREN WERE TESTED FOR COGNITIVE AND SOCIAL DEVELOPMENT. IT WAS DETERMINED THAT COGNITIVE DEVELOPMENT DID NOT SIGNIFICANTLY CHANGE FOR CHILDREN IN ANY OF THE GROUPS BUT SOCIAL DEVELOPMENT IMPROVED SLIGHTLY. THE CHILDREN IN THE FOLLOWUP STUDY WERE TESTED TWICE DURING THEIR KINDERGARTEN YEAR. ALSO, A CONTROL GROUP OF 67 NON-HEAD START CHILDREN IN KINDERGARTEN WAS SO TESTED. BOTH GROUPS DEMONSTRATED SIGNIFICANT INCREASES IN IQ, BUT THERE WAS NO DIFFERENCE FOUND BETWEEN THE SCORES OF THE HEAD START AND NON-HEAD START CHILDREN. THE MOTHERS OF CHILDREN IN BOTH GROUPS WERE INTERVIEWED TO OBTAIN THEIR OPINIONS OF THE PROGRAMS IN WHICH THEIR CHILDREN PARTICIPATED. THEIR OPINIONS ABOUT HEAD START WERE GENERALLY ENTHUSIASTIC AND POSITIVE. IT WAS CONCLUDED THAT THE SUCCESS OF THESE HEAD START PROGRAMS COULD BE MEASURED MORE IN TERMS OF PUPIL ENJOYMENT AND PARENTAL SATISFACTION THAN OF COGNITIVE DEVELOPMENT. (WD)

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A COMPARATIVE STUDY OF VARIOUS PROJECT HEAD START PROGRAMS

by

John Harding

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Progress Report on: A Comparative Study of Various Project Head Start Programs (OEO Contract 545)

John Harding
Department of Child Development and Family Relationships
New York State College of Home Economics
Cornell University

Introduction

This research is primarily an analysis and follow-up study of three Head Start programs carried out in Tompkins County, N.Y. during the summer of 1965. The project has three objectives, each involving a different program of data collection. Objective 1 is a description and analysis of the three programs based on data collected while the programs were in session. All the data relevant to this objective have been collected, and analysis is approximately half completed. The substantive part of this report will deal entirely with the first objective and this initial set of data.[1]

Objective 2 of the research is a description and analysis of a year-round nursery school program for 3 and 4 year old children from poor families. This program began in September 1965 under the administrative direction of one of the three Head Start sponsoring groups. Data collection for this objective is proceeding according to the schedule described in the project proposal submitted to the Office of Economic Opportunity last July. Objective 3 of the research is a follow-up study of children and mothers involved in the three Head Start summer programs, and a comparison of the mothers' practices and the children's social and intellectual development with those of a control group of children and mothers of the same socio-economic status who did not participate in the Head Start programs. Data collection for this objective is at present about two weeks behind schedule. This report will not deal at all with Objectives 2 and 3.

Description of the Three Head Start Programs

This section will be a brief, summary account of each program in turn. I shall begin with the one involving the least staff and the smallest number of children. It should be said initially that the similarities among these programs are more impressive than the differences. One reason for this is probably that staff training for all five head teachers was carried out at the same institution (Cornell University, Dept. of CD&FR) during the week before each program began. Each program was intermediate in nature between a typical nursery school and a typical kindergarten program; also each program provided every morning for some time to be devoted to indoor free play, snack, structured group activities, and outdoor free play. Each program

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1. I want to thank my research assistants, James Schuh, Constance Smith, and Frances Biemiller, for their skillful and devoted efforts in collecting the data on which this report is based.

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was planned and directed by public school personnel, so that the emphasis was primarily on educational objectives rather than medical, social work, or nutritional ones.

Dryden

The Dryden Central School District covers approximately 100 square miles of countryside dotted with occasional villages. One of these villages, Freeville, contains an elementary school which provided the site for a Head Start program serving pre-kindergarten children from the entire school district. Fifteen children were enrolled in the program, all white. Twelve had fathers living in their homes; of these fathers two thirds were laborers. The educational level of the mothers was generally low: only 20 percent had graduated from high school. Median family income was $3500 per year; median family size was seven members.

There were only two teachers at the Dryden Head Start Center. The head teacher was a woman of great energy and enthusiasm who had organized the entire program almost single-handed. She had seven years of previous teaching experience in the district, six of them in first grade. The paid assistant teacher was an 18 year old girl selected by the head teacher on the basis of known ability and interest in the program. She had graduated from high school the previous month.

The Dryden program ran for 34 days in a large, well-lighted kindergarten room. The basic daily schedule was:

9:00 - 9:15	Greeting and quiet table activities.
9:15 - 9:30	Snack (Several of the children came regularly without breakfast.)
9:30 - 10:15	Free play indoors (Available equipment included wagons, trucks, large blocks, unit blocks, puzzles, manipulative toys, books, crayons and paper, clay, easel paints, housekeeping materials, and costumes.)
10:15 - 10:30	Story period.
10:30 - 11:15	Outdoor play.
11:15 - 11:30	Washing up.
11:30 - 12:15	Lunch
12:15 - 12:30	Rest.
12:30 - 1:00	Quiet table activities and preparation for going home.

A distinctive feature of the Dryden program was the change in emphasis as the weeks progressed. During the first week the head teacher was mainly concerned that all the children should become familiar with the materials and equipment, the routines of the day, and the rules for behavior in the

playroom. She also placed great emphasis on greeting each child by name, engaging children in conversation, and suggesting activities to children who seemed to be "at loose ends." As the program continued, increasing amounts of time were spent in formal group situations -- stories, games, music, and discussions. Group games were used for teaching shapes, colors, numbers, sounds, smells, etc. During the last week a group teaching situation was also used to discuss with the children such things as sharing and being thoughtful of others, playground rules for kindergarten, and what things would happen in kindergarten.

The major problem of the Dryden center was transportation. Nothing was provided in the budget for this purpose, though the children had to be brought from all over the school district. Most of the transportation was furnished by volunteers, but during the last four weeks of the program the head teacher drove a carload of children to and from the center each day,

Newfield

The Newfield Central School District is about half the size of Dryden, and even more rural. All public school facilities are located in the village of Newfield, which has a population of about 500. Two large, well-lighted kindergarten rooms were made available for the 28 white children enrolled in the Head Start program. These children came from homes that were not, on the average, nearly so poor as those of the Dryden children. Twenty of the Newfield children had fathers living in their homes; of these fathers only one fifth were laborers. The majority were craftsmen, operatives, farmers, or white collar workers. Two thirds of the mothers had graduated from high school. Median family income was $5000 per year, while median family size was six members.

One of the Newfield head teachers had taught primary grades for 8 years and kindergarten for 16 years; the other had two years of kindergarten experience and two years with a first grade class of slow learners. There were also three paid assistant teachers and one volunteer. Two of the paid assistants were college girls who were available for the summer; one had completed a year of college, and one had completed a semester (devoted mainly to nursery school training). The third paid assistant had graduated from high school the previous month. The volunteer was a 14 year old girl who had just completed junior high school. She took a more limited role than the other assistants, spending the majority of her time with tidying and cleaning jobs in the playroom.

The Newfield center was in operation for 33 days. All but two children were brought to and from the center by a school bus. The daily program ran from 9 to 12 and did not include lunch. The basic daily schedule was as follows:

9:00 - 10:00 Free play indoors (Available equipment included wagons, trucks, large blocks, unit blocks, sawdust box, puzzles, manipulative toys, books, crayons and paper, easel paints, and housekeeping materials. On special days finger paints and play dough were available.)

10:00 - 10:15 Snack.

10:15 - 10:55 Group activity (most common activities were singing, finger plays, games, and stories.)

10:55 - 11:25 Outdoor play.

11:25 - 11:45 Rest

11:45 - 12:00 Quiet group activity -- most commonly a story, or listening to records.

One of the distinctive features of the Newfield program was the weekly field trip. Both classes traveled together by bus, and the trips lasted between one and two hours. Mothers were invited to accompany the children on these excursions, so that there would be one adult for each two or three children. Trips were taken to a farm, an airport, a bakery, a fire station, a chicken hatchery, and a city park. The teachers reinforced these experiences by arranging special trip-related activities afterward (such as building an airport out of blocks) and by discussing what the children had seen and done.

Another distinctive feature of the newfield program was the extreme quiet maintained in one of the two classrooms. The head teacher of this class felt that one of the most important goals of the program was for the children to learn kindergarten rules and routines. She conversed frequently with the children, but always in a low voice and sometimes actually in a whisper. Both the head teacher and the assistant teachers emphasized quiet and orderly behavior and were very successful in getting the children to conform.

Ithaca

Though Ithaca is not in any sense a metropolis, its year-round population of 20,000 makes it the largest city in Tompkins County. Nearly all of Tompkins County's Negroes live in Ithaca, and the majority are in the two elementary school districts from which Ithaca's Head Start Program drew its children. For twenty or thirty years the Ithaca City School District has operated in this area an all-day nursery school for children of working mothers. It is located in the Henry St. John elementary school, and is usually referred to as the Henry St. John nursery school. The director of this nursery school was the main person responsible for planning the Ithaca Head Start Program.

Thirty-four children were enrolled in this program, 24 white and 10 Negro. These children were from roughly the same socioeconomic level as the Dryden Head Start Children. Twenty-one had fathers living in their homes, and of these fathers approximately forty percent were laborers. Forty-two percent of the mothers had completed high school. Median family income was $3600 per year; median family size was six members.

The Ithaca teaching staff was somewhat larger than the Newfield staff and also more diverse in background. One head teacher came to her work with six years of kindergarten experience; the other had 5-1/2 years experience teaching in a college nursery school and 2-1/2 years experience in a day care center. The assistant teacher with the greatest responsibility

in the Ithaca program was a 20 year old girl who had completed two years of training in elementary education at one of the state colleges. Two assistant teachers were 17 year old high school girls paid through the Neighborhood Youth Corps. The fourth paid assistant teacher was a 38 year old mother of five children, the youngest of whom was enrolled in the program. In addition to the paid assistants there were two middle class volunteers, each of whom worked eight hours a week. Both of these women were college graduates with some training in education, and both had been auditors in the six day staff training program at Cornell.

Space for the Ithaca program was provided in two medium-sized basement rooms adjacent to the Henry St. John nursery school (which is a year-round operation). Some of the equipment was borrowed from this nursery school, while some was purchased new for the Head Start program. The windows were few and high, but fluorescent lighting fixtures provided adequate illumination. There was no sound proofing material in the walls or ceilings of the playrooms, and it seemed to the observers that the sound level rose out of proportion to the amount of activity going on.

The Ithaca program ran for 38 days, seven hours a day. Twelve children rode a bus to school, while the others were brought by a parent or older sibling. The typical daily schedule was as follows:

9:00 - 9:30 Free play indoors (Available equipment included wagons, trucks, large blocks, unit blocks, puzzles, manipulative toys, books, crayons and paper, scissors, paste, play dough, and housekeeping materials.)

9:30 - 9:40 Juice (This was served very informally, Children went to a table to get their juice, and then returned to their activities.)

9:40 - 10:00 Free play indoors.

10:00 - 10:30 Group activity (Most common activities were stories and finger plays.)

10:30 - 11:00 Outdoor play.

11:00 - 11:30 Washing up and rest.

11:30 - 12:30 Lunch

12:30 - 2:30 Nap (This was taken very seriously. Shades were drawn, shoes removed, and the children were expected to sleep. Beginning at 1:30 children who woke up were allowed to go outside to play. This was done quietly, so as not to disturb the children who were still sleeping.)

2:30 - 3:30 Outdoor play.

3:30 - 3:45 Toileting and washing up.

3:45 - 4:00 Snack (This consisted of milk, cookies, and sandwiches.)

The Ithaca program was a little more like that of a nursery school and a little less like that of a kindergarten than was the case in the other two Head Start centers. One of the two head teachers (whose previous experience had been with kindergarten children) stated explicitly that her goals for the Head Start children were primarily ones of social development rather than cognitive development. Unfortunately she had a group of 18 children of whom two were acute behavior problems. A large part of her time and energy went into coping with recurrent social crises -- quarrels over materials, acts of aggression, and the constant demands of several of the children for her attention.

The goals of the other Ithaca head teacher were more like those of the head teacher of the Dryden CDC; however her group did not show the gradual progression toward structured group activities that was characteristic of the Dryden program. Throughout most of the day the children's activities were unstructured in the sense that they could play with available equipment and materials in whatever way the wished. The head teacher felt that it was important to work around what the children were interested in and to follow their lead. For example, when the children spontaneously brough chairs to the story circle one day this was adopted henceforth as the routine procedure, though formerly they had set on the floor.

Special attempts were made in the Ithaca program to improve each child's image of himself and to raise his self-esteem. Snapshots of the children were put on the walls around the room, and the children's artistic productions were displayed in the room. Also pictures were drawn of each child by having him lie down on a large piece of wrapping paper while the teacher drew around him. The child then drew in the face and colored the clothing.

A distinctive feature of the Ithaca program was the number of meetings with parents. Three of these were held; the first of these was attended by 20 mothers, the second by 15, and the third by 10. (By contrast in Newfield there was only one parents' meeting, attended by ten mothers; and in Dryden there were none.) Many of the special problems of the Ithaca program stemmed from over-enrollment. The program director had enrolled 34 children in the expectation that a considerable number would drop out; however to everyone's surprise dailing attendance averaged 32 children from the first week of the program to the last.

Results of the Programs

At the present writing we have analyzed data pertaining to morale of teachers, attendance of children, social development of children and cognitive development of children. The morale of the teachers impressed us as truly remarkable. On the evaluation questionnaire administered at the end of the program they were asked: How much did you enjoy your duties with Operation Headstart? All sixteen head teachers and assistant teachers answered "A great deal." A similar proportion answered "A great deal" to the next question: Would you look forward to participating in Operation Headstart next year?

Attendance at all three programs remained approximately constant from the first week to the last. In each program one or two children did not get started until the second week, and one or two dropped out or moved away during the program.

Table 1

Average Daily Attendance of Children
in Head Start Programs

	Ithaca	Newfield	Dryden
First week	32	25.5	12
Last week	32.5	25	12

Attendance was poorest in the Dryden program. Most of the absences were due to illness, such as chicken pox, kidney infection, and strep sore throat.

Our data on social development of children come from the evaluation questionnaire filled out by the sixteen teachers and assistant teachers at the end of the program. Table 2 summarizes these data.

Table 2

Summary of Answers to Question 19: I feel that, in general, children attending the Operation Headstart Program were changed in the following ways:

	Much Better	Better	No Change	Worse	Number of Respondents
1. Getting along with other children.	69%	31%			16
2. Self-confidence.	56%	44%			16
3. Speaking ability.	56%	44%			16
8. Can do things on his own.	56%	44%			16
4. Everyday manners.	50%	38%	12%		16
7. Interested in new things.	38%	62%			16
6. Doing what he's told.	31%	56%	6%	6%	16
5. Finishing what he starts.	19%	69%	12%		16

The general picture here is one of great improvement in social behavior. Since the ratings are rather subjective, and there were only a few raters in any one program, it seems to me unwise to attempt any comparisons between one program and another on the basis of these data.

Our measure of cognitive development was change in scores on the Caldwell Preschool Inventory, which was administered during the second and seventh week of the program to all available children. Part of this inventory consists of the Goodenough Draw-a-Man and Draw-a-Woman test. We found no changes on this test in any of our three groups. Table 3 presents second week and seventh week scores on the Preschool Inventory, minus the Draw-a-Person items. Average score on the two Draw-a-Person items together was 3.8 on the first test and 3.8 on the second test. An attempt was made to test every child in every center twice with the Preschool Inventory; this proved impossible in a number of cases because of repeated or prolonged absences. Table 3 is based entirely on children who took the test both times. For convenience of administration the test was divided into two halves which were given on successive days. Constance Smith always administered the first half, and James Schuh always administered the second half.

Table 3

Mean Scores on Caldwell Preschool Inventory
Excluding Draw-a-Person Items

	Ithaca		Newfield		Dryden
	Miss A's Class	Mrs. B's Class	Mrs. C's Class	Mrs. D's Class	
Second week	200	196	190	201	192
Seventh week	211	208	206	212	209
Mean gain	11	12	16	11	17
Number of cases	17	15	11	14	11

Although there was great variability in scores from child to child within each group, there is a remarkable similarity in mean gains from group to group. Miss A in Ithaca was the head teacher whose class was so troubled by disciplinary problems. Mrs. C in Newfield was the head teacher who managed to maintain such a quiet -- even subdued -- atmosphere in her group.

Because of the large differences in size of staff in the three Head Start centers and the very considerable differences among the teachers in objectives and methods we had expected to find some substantial differences in results. Some may become apparent when our follow-up study is completed; however at present it seems that there were few if any significant differences in effectiveness among the three Tompkins County Head Start programs.

despite remarkably different methods + systems.

Harding, John, Dr., "A Comparative Study of Various Project Head Start Programs," Cornell University, New York State College of Home Economics, June 1966.

The Harding study is in three parts: description and analysis of three summer 1965 Head Start programs in Tompkins County, New York; description and analysis of a year round nursery school program for three and four year old culturally deprived children; and a follow-up study of children and mothers(involved in the summer programs) during their kindergarden year.

A. A Description and Analysis of the Tompkins County Head Start Programs is contained in the October 30, 1966 Progress Report. The results of the analysis of the three summer 1965 Head Start programs for 74 five-year old Head Start children indicated the following:
1. Morale was reported as high for the 16 Head teachers and assistants
2. Attendance was constant in all three groups
3. Teachers felt that there was a great improvement in the social behavior of the children
4. There were no changes in the pre and post test scores on the Goodenough-Draw-A-Man and Draw-A-Woman tests for 68 Head Start children was 3.8 on both tests.
5. Similarity in mean gains of 68 Head Start children in five Head Start classes in three programs (mean gains of 11-17 points).
6. There were really few if any significant differences in the effectiveness of the programs among the three Head Start programs.

B. Part I: An Experimental Nursery School Program for Three and Four Year Old Culturally Deprived Children (p.2--

The nursery school selected for an experimental program for three and four year old culturally deprived children in the fall of 1965 normally serves as a daycare center for children of working mothers from the entire Ithaca, New York area. It operates year-round, five days a week for ten hours a day. Most of the families are in the middle class and pay tuition fees according to their income. Twenty-five three year olds, and forty four year olds are enrolled full-time.

Culturally disadvantaged children were selected very carefully for the experimental program which began in September 1965 sponsored by the Ithaca School District and project continuing under OEO funds. Sessions were planned to provide them with increased learning opportunities and individual attention. Their classes ran for one-half day for five days a week. Twenty culturally deprived children were enrolled in the fall; and there were twenty-four students by the spring of 1966.

8 three year old juniors and 3 four year old seniors (10 white, and 6 Negro students) were tested in the fall of 1965 and seven months later, on the Stanford-Binet Intelligence Scale and the Peabody Picture Vocabulary Test. It was found that the mean family size was five, and a high proportion of the children came from father-absent homes.

In October all 20 children were tested on the Stanford-Binet and showed a mean IQ of 91; and Peabody Picture Vocabulary Test showing a mean of 74.

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The mean IQs for the 8 selected juniors and 8 selected seniors were as follows: (Table 4, p.6)

	Juniors (3 yr.olds)		Seniors (4 yr.olds)	
	S-B	PPVT	S-B	PPVT
Oct.1965	93	78	94	72
April 1966	104	93	104	93
Mean Gain	10.7	15.0	9.1	21.5

Results:
Tests of significance on the mean gain for the S-B, t=3.58 was significant at the .01 level, and on the PPVT, t=6.73 was significant at the .001 level (p.6).

C. Part II. Follow-up Study of Children and Mothers in the Three Summer Head Start Programs and Comparison with Control Group Children and Mothers from the Same School Districts

The follow-up study is a continuation of data analysis of three summer 1965 Head Start programs in Tompkins County, New York (Ithaca; Newfield; and Dryden) to determine the effects on the Head Start children and mothers during their kindergarten year. Approximately 74 five year old children from the three Head Start programs were enrolled in kindergarten classes in the fall of 1965; 69 of these children were tested during the school year; and home interviews were conducted with 68 of their mothers in February and March 1966. Approximately 67 poor children were selected from the same kindergarten classes as the Head Start children to constitute a control group; they were tested during the school year, and home interviews were conducted with 57 of their mothers in May and early June 1966.

This section of the report is divided into six parts:
1. Ratings of Personality and Social Behavior Made by children's teachers at the beginning and the end of the Head Start summer program.
2. Evaluation of Head Start program by mothers of Head Start children.
3. Selection of 67 culturally deprived children to serve as controls for Head Start children.
4. Interviews with Control group mothers.
5. Gains made by Head Start from summer to fall on PPVT.
6. Comparison of Head Start and controls on PPVT, Stanford-Binet, and the Metropolitan Readiness Test (MRT).

Ratings of Personality and Social Behavior Made by Head Start Teachers during summer of 1965 (pp. 7-13)

74 Head Start children were rated by the five Head Start teachers on the Behavior Inventory during the second and seventh week of the Head Start program during the summer of 1965. See Table 5, p.8 for frequency distribution of item responses, means (plus change) for both administrations.

According to the teachers, the greatest change in the Head Start children occurred in better relations with adults; although they felt less change had occurred in peer relations. The results are

in contrast to the OEO questionnaire filled out by the paid and voluntary workers at the end of the summer program. However, (p.13) the .."overall picture on the Behavior Inventory is one of slight to moderate improvement in each one of the behavior areas."

Mother's Evaluations of Head Start Program (pp.14-18)

68 mothers of the Head Start population were located and interviewed in February and March of the children's kindergarten year. See Table 6 for ratings of program activities; and Table 7 for perceived changes in their children. There were 29 mothers from Ithaca, 26 from Newfield, and 13 from Dryden. There were no significant differences in mothers' responses from one school to the next. All were enthusiastic about the program. The highest ratings were given to activities using creative materials, verbal interaction with teachers (intellectual and cultural enrichment activities). The medical, dental and nutritional aspects of the program were weighted with almost equal enthusiasm. The mothers felt that the greatest change in their children came in the area of "interested in new things." See pp.16-17 for discussion of parent participation by program.

Selection of 67 culturally deprived children to serve as controls for Head Start children.(pp. 18-19).

The controls were"roughly matched" with the Head Start population ~~from~~ asking kindergarten teachers and pricipals to pick children from same socio-economic level as Head Start children but who had not been asked to participate. The child was eliminated from being a control if parents had been asked to enroll children in Head Start but had refused; and if they were kindergareen repeaters. Since there were some differences among the control populations by school, the results were kept separate for the three schools. For example, the Head Start population from Newfield was from a higher socio-economic level than those from the other two programs. There were 27 controls from Ithaca (21 white; and 6 Negro--same distribution as 14 from Newfield; and 26 from Dryden (neither with Negro population). HS sample

Interviews with Control Group Mothers (pp.19-21)

57 control group mothers were interviewed in late May and early June of 1966 to determine their reactions to kindergarten program, their knowledge and opinion of the program, perceived changes in child as a result of kindergarten, child's activities at home, and general questions about family income, education etc. In comparison to Head Start families, all three sets of control families are superior in gross family income (although income data on the controls is a year later than that of Head Start). On mother and father's education, the controls and Head Start groups seem somewhat comparable although there are some differences (See tables 8, & 9, p.20 and discussion on p.21).

Gains on Tests of Language and Intellectual Abilities (p.21-26)

The Head Start children were tested during the second and seventh week of the summer 1965 Head Start program on the Preschool Inventory; and third and fourth week on the Peabody Picture Vocabulary Test, Form B (See: October Progress Report 1965).

A comparison of the total mean IQS of 67 Head Start children when tested both in July 1965 and the Winter 1965-1966 of their kindergarten year on the the Peabody Picture Vocabulary test, Form B shows a mean gain of 9.2 points from a mean IQ of 84.2 in July to a mean IQ of 93.4 in the winter (See Table 10, p.23 also for breakdown by classes). The overall increase yields a t of 3.98 significant at the .001 level (p.23). The author points out that given the first testing during the middle of the Head Start program, the gain may be attributable to the kindergarten experience. Of the Head Start children tested, 28 were from Ithaca; 26 from Newfield; and 13 from Dryden. The Newfield children do show a greater average gain than the Ithaca classes, with Dryden showing unique results which are possibly traced back to the Head Start teacher as her same class made the greatest gains on the Preschool Inventory during the summer. In addition, the Newfield kindergarten program was a full day one while the other programs were half-day. Either of these factors may account for the differences in gains.

The second wave of testing began the end of October and was finished in February of the kindergarten year. Both the Head Start and control groups were tested on the Peabody Picture Vocabulary Test, Form A, and Stanford-Binet, Form L-M. Analysis of the test results indicated no systematic differences between the Head Start and control groups on either test (p.22) It is to be noted, however, that testing schedules were not the same for each school: end of October to mid-December 1965 in Ithaca; early December to January 1966 in Newfield; and January-February 1966 in Dryden (p.22).

Results of the Winter 1965-66 Mean IQs for Head Start and Controls on S-B and PPVT shows the following: (Table 11, p.24)

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
S-B	95	98	99	104	96	93
PPVT	93	92	94	98	91	85
N	(29)	(27)	(27)	(14)	(13)	(26)

Conclusions:

1. there is no difference in average level of ability between Head Start and controls when tested half way through their kindergarten year.
2. Table shows that similar gains have been made by controls.
3. However, confidence in "these conclusions depends primarily on the adequacy of matching of the Head Start and control groups in each school district"(p.24)
   a. adequate matching was indicated in Ithaca and both groups indicated same level of ability.
   b. In Newfield controls appeared to be from a somewhat higher socioeconomic level and testing indicates a somewhat higher level of ability.

c. In Dryden test performance indicates results are opposite in direction to the difference in socio-economic status which points to the Dryden Head Start program as probably being the most successful one in producing lasting influence.

4. On analysis of covariance (Yates' method of Weighted Squares of Means) with mother's education as the independent quantitative variable no significant differences in group means were found on either the Stanford-Binet IQ or PPVT IQ tests (p.25).
   a. providing estimates of within-groups correlation for mother's education and child's IQ separately for Head Start and controls showed the following for the S-B: .50 with mother's education for HS group; and -.12 for the control group.
   b. Using total correlations (all HS and control groups) they found an r of .50 between the S-B and mother's education for the Head Start group and r of -.07 for controls with difference significant at .03 level (p.25).
   c. Correlations between the PPVT IQ and mother's education were more reasonable with .38 for HS group and .05 for controls.

Final testing was conducted in April and early May 1966 of the kindergarten year on the Metropolitan Readiness Test, Form A, showing the following mean raw scores (Table 12, p.25):

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
MRT	39	41	51	51	41	41
N	(29)	(23)	(25)	(12)	(13)	(21)

The main contrast to previous results is that the group mean differences between Head Start and controls"are entirely eliminated while difference between school districts are increaséd"(significant at the .01 level).p.25 There were low correlations between Readiness test scores and mother's education.

Conclusions: (p.26)

1. Clearest effects of Head Start are found in child's enjoyment of and parents' satisfactions with the programs making a start toward good parent-school relationships.
2. It is difficult to estimate Head Start's lasting effects on child's social and intellectual development
   a. Head Start children have improved and improvement lasted throughout most of their kindergarten year.
   b. However, control group showed similar kinds of improvement
   c. Author concludes that it is the combined effects of the Head Start and kindergarten programs that were extremely impressive.

30 June 1966

Final Report on: A Comparative Study of Various Project Head Start Programs (OEO Contract 545)

John Harding
Department of Child Development and Family Relationships
New York State College of Home Economics
Cornell University

Introduction[1]

This report is a continuation of my progress report of 30 October 1965 dealing with the same subject. The October report contained a description of three different Head Start programs carried on in Tompkins County, N.Y. during the summer of 1965 and an analysis of most of the data on individual children collected during the summer. This information is presupposed in the following report.

The present report is divided into two completely independent parts, dealing with two unrelated sets of children. Part I is a description and analysis of a year-round nursery school program for 3 and 4 year old children from poor families in Ithaca, N.Y. This program began in September, 1965 under the sponsorship of the Ithaca City School District and is still continuing with funds provided by the Office of Economic Opportunity.

Part II of the present report continues the analysis of data collected in the summer of 1965 on 74 five year old children enrolled in the three Tompkins County Head Start programs. Most of these children were enrolled in kindergarten in the county in September, 1965 and were tested on three different occasions during the 1965-66 school year. Their mothers (or mother surrogates) were interviewed at home during February and March 1966.

Part II also includes a description of 67 poor children selected as controls from the same kindergarten class rooms as the Head Start children. These children were tested throughout the school year at the same times as the Head Start children, and their mothers (or mother surrogates) were interviewed at home during late May and early June, 1966.

PS 000206

1. I am deeply indebted to my research assistants who helped gather the data and carry out the statistical analysis on which this report is based ---- Gary Shaw, Maxine Bernstein, Celia Morris, James Schuh, Jean Simmons, and Theda Zimrot. I want also to thank the teachers and administrators of the Ithaca City School District, the Newfield Central School District, and the Dryden Central School District for their patience and unfailing cooperation throughout a year of research.

PART I

An Experimental Nursery School Program for Three and Four Year Old Culturally Deprived Children

In September, 1965 an experimental nursery school program was initiated in Ithaca, New York through the cooperation of the Department of Child Development and Family Relationships at Cornell University and Henry St. John's Nursery School. The plan called for 20 children from poor families who were receiving assistance from the Tompkins County Department of Public Welfare, to be enrolled in the regular nursery school program at Henry St. John's and, in addition to this full day, 5-day-a-week experience, to receive increased learning opportunities and individual attention in a supplementary activity schedule arranged exclusively for them during the morning. At a later date the size of the group was officially raised to the number of 24, but not all of these children actually participated in the "special" activities.

The General Nursery School Program

The nursery school is located in the basement of the Henry St. John's Elementary School in Ithaca (mentioned earlier in this study's October Progress Report in relation to the summer Head Start program) and serves as a day care center for the children of working mothers from the entire Ithaca area. It operates year-round, 5 days a week, 10 hours a day observing the same holidays and vacations as the public schools except for the summer vacation. Most of the children come from middle class families, and their parents pay tuition fees on a sliding scale based on family income.

The staff for the nursery school program at Henry St. John's consists of three teachers for each of the two groups of children plus the school's director. The backgrounds of the teachers include work with mentally retarded children, with children in welfare centers (both volunteer and paid) and with kindergarten and nursery children in many places. The school's director has been head of Henry St. John's since 1948 and directed its Head Start program in the summer of 1965. In addition to the regular staff, a lecturer from Cornell's Child Development and Family Relationships Department was in charge of the experimental sessions and for the undergraduates from Cornell who assisted her. The total number of children in the 3 year old (Junior) group is approximately 25, and in the 4 year old (Senior) group approximately 40.

The physical set-up of the nursery school includes a coat room with individual open lockers (labeled by the child's name and a miniature picture of some animal), and an enormous play room divided so that half the area is available for each of the two groups of children. Situated throughout the two areas are numerous pieces of play equipment, ranging from large ones such as a slide, rocking horse, see-saw, wagons, etc. to small ones such as table toys, puzzles, paint, clay, crayons, etc. (Items are not necessarily equally available to both groups.) There is a common bathroom adjacent to the play room (which also utilizes name and animal stickers to identify each child's wash cloth from all those hung on hooks lined along the walls). A medium-

large room down the hall from the play room is set up with small cots (each with the child's name taped on it) and serves as the nap area for the Juniors (the Seniors take their naps on cots which are set up, at the appropriate time each day, in a portion of the big play room). Another room off the hallway is used for the special activity (experimental) sessions and for a brief "retreat" for the Juniors, while their tables in the play room are being prepared for lunch. Finally there is an outdoor play area, immediately adjacent to the building, which is surrounded by high wire fencing and covered with an asphalt top. Facilities there consist of 2 sandboxes, 2 slides, 3 swings, a jungle gym, wheeled toys, saw horses, large hollow blocks, and balls, as well as smaller implements for sand play and 2 trees, which provide some opportunity for shade from the sun.

The school opens its doors each day at 8:00 A.M., generally to already waiting children and accompanying adults. Each child has his throat checked by the head teacher before the adult leaves. The children then begin the day with a free-play period, with no restrictions as to the area of the play room to be used. Their play at this time typically consists of gross motor activities, such as running, jumping, swinging on the climbing ladder, pushing or pulling each other in various types of wagons, sliding down the slide, etc. At about 8:30 the children are separated into their respective age groups, a process aided by the mere mention of the forthcoming morning juice time. Juice is served to the children seated at small tables on their respective sides in the play room. (The Seniors go first on all routines, thereby making the time schedule for the Juniors about 5 to 10 minutes later.) After juice, the children are taken, in small groups, to the toilets; then the Seniors either return to free play inside or, in good weather, are led outside to play. The Juniors return to free play inside in any case, except for the "experimental" members, who go for their special session at this time. About an hour later, the Seniors exchange places with the Juniors, if they have been outside; otherwise, indoor play for all continues. Activity on the playground generally is free and vigorous, utilizing all the facilities and space available. Soon after 10:00 the Senior teachers prepare to gather their children into small groups for story time. The Senior experimental group now goes for their special session and the Junior members rejoin the other Juniors. At approximately 10:30, the Seniors begin toileting; 20-30 minutes later, the members of the Junior group, now inside, are taken to the experimental room to await their toileting and wash-up before lunch. Their teachers read to them during this period, while permitting a few at a time to proceed to the bathroom and prepare under supervision for lunch. The Seniors, meanwhile, are in the play room, preparing to lie down on their cots (just put up) to await the call to lunch; the Juniors eventually move to their nap room and do the same thing.

Lunch is served in the big play room between 11:30 and 11:45. It is a hot meal; every child gets one full serving and is then free to return for seconds of any or all of the meal, with the understanding that he gets no dessert if he doesn't eat everything on his plate. After lunch, the children begin toileting again and then go to their cots for an afternoon nap. This is a major part of the day's program, since it lasts until about 2:30. After their naps, the children are served a snack and then free play is resumed, sometimes inside, sometimes outside. Indoor play in the afternoon is directed to small group table-top activities, such as drawing, working jig-saw puzzles, dressing dolls, building with small blocks, beads, etc., and looking at books. However some children still prefer to remain up and about. The afternoon

is completed in this way, until all the children have been picked up by someone to be taken home. Most of the children leave before 5, but a few remain as late as 5:30 P.M.

In general the children adapt very quickly to, and thereafter seem to thrive on, the fairly strict routines imposed by the teachers. It would seem that this system of "controlled freedom," as the director calls it, is to the liking of the children. Also the relaxed atmosphere which prevails seems to promote the children's adjustment to the new social pressures they face.

The Special Enrichment Program

The children comprising the total experimental group were carefully selected and screened by the case worker at Public Welfare in terms of their needs, their potentialities, their physical ability to take on a nursery school program, and the desire and willingness of the parents to have the child participate in the program. The experimental sessions were designed to provide them with increased learning opportunities and individual attention. This program operated on a half-day schedule, 5 days a week, under the supervision of a Cornell faculty member responsible both to the Director of the Cornell Nursery School and to the Director of Henry St. John's Nursery School. She was assisted by a group of Cornell undergraduate girls, who alternated their work days so that there were 5 or 6 of them present on each day.

Taking the two groups of children separately, the staff of this experimental program offered the children varied activities over the days, planned to emphasize the development of the children's cognitive, verbal and social skills and facilitated by a high teacher-pupil ratio. Each session lasted about 45 minutes and was held in the morning. Some of the featured activities were counting and number concept games (e.g., block building, stringing beads); object identification games (from books, pictures, etc.); creative play (e.g., painting, collage work, drawing, play dough); activities which promoted the development of one's self-concept (e.g., tracing one's body and filling in the features, individual and group photographs); considerable practice with implements (e.g., pencils, scissors, paste) and much attention to books and stories. The staff emphasized in particular verbal communication -- calling the child by his first name, talking about his present activity in descriptive terms, and asking questions to elicit speech from the child. The sessions were quite free and permissive, however, and a child was permitted to proceed at his own pace and, within reason, according to his own inclinations. This permissiveness did not generally present a problem because the children were usually interested in the activities set up for them; in exceptional cases, concentrated individual attention by one of the staff served to orient the child to at least some constructive activity, even if it was not the group activity planned for that day. The children were continually praised and encouraged in their activities by the staff, who circulated among the children, getting down on the floor with them, offering help as needed, and initiating verbal interaction as often as possible. In this they differed from the regular Nursery School staff, who, except during story time, remain on their feet and tend to interact with the children only when the children seek them or when control is called for.

It is very difficult to decide exactly what group of children should be considered as "subjects" in this study, since there was so much coming and going. Children were brought into the program gradually

in September, a few each week, until nine Juniors and nine Seniors were enrolled. Then enrollment remained steady for several weeks while additional funds were sought for the program. A small number of children dropped out of the program at various times during the year when their families moved. Their places were taken by other children referred by the Department of Public Welfare, and additional places were made available when the program secured firm financial support from the Office of Economic Opportunity. By the spring of 1966 24 poor children were officially enrolled in the experimental program. Of these children 9 Juniors and 13 Seniors were participating in the morning program of special enrichment arranged by the Cornell supervisor.

We shall present detailed findings on the 8 Juniors and 8 Seniors whom we were able to test both in the fall of 1965 and in the spring of 1966 seven months later. Ten of these children were white, and six Negro. The mothers of twelve of the children were either divorced or separated from their husbands; two had never been married; and one child was in a foster home. Family size ranged from three to thirteen members, with a mean of five. A majority of the mothers were employed full time outside their homes. We do not have as much information on these families as we do on the families in the Head Start summer program. Our impression is that the average level of mother's education is roughly the same for the 1965-66 experimental preschool group as for the 1965 Ithaca Head Start children, but that the economic level of the preschool families is somewhat below that of the Head Start families as a result of the very high proportion of father-absent homes.

Results of the Program

All in all there were 25 children who participated in the experimental nursery school program at some time throughout the year. Fluctuations in attendance were due mainly to individual children's illnesses, but also to drop-outs and replacements. Even among the test sample (of 16 children) the attendance record ranged widely from a minimum of 80 out of 165 possible days present to a maximum of 158. The mean was 135, and on an average day 13 of these children were present.

The children were given two tests — the Stanford-Binet an the Peabody Picture Vocabulary Test (Form A in October, Form B in April). These tests were administered on two occasions, in October '65 and again in April '66 by the same person. The psychometrician was a graduate student at Cornell, trained in the administration of individual intelligence tests. In preparation for the testing, he spent several days observing in the nursery school and establishing himself as a familiar person to the children. No child was tested until he had been attending the school for at least 2 weeks and seemed to be well adjusted to the school routine. Testing was done during the morning to minimize fatigue on the part of the children. A special room was provided for the testing by the school administration, and the nursery school teachers helped in making it easy for the graduate student to secure the cooperation of the child.

In the actual testing session the Peabody PVT was used as a warm-up procedure, followed by the Stanford-Binet. We shall report both Binet results and Peabody results in terms of IQ's for the sake of comparability, although we are fully aware of the limitations of the Peabody PVT as an estimate of intelligence for children of this age and of this

social background. Perhaps the most important advantage of the IQ as a measure for research purposes is that it provides an automatic adjustment for the effect of increasing age from fall to spring.

In October the Stanford-Binet IQ scores for all twenty of the children taking the tests at that time ranged from 64 to 116 with a mean of 91. The Peabody IQ's for the same children, tested at the same time, ranged from 55 to 104 with a mean of 74. Table 4 shows the results for the 16 children (8 Juniors and 8 Seniors) who, of the total number participating in the experimental program, were present for both test sessions.

Table 4

Mean IQ's on Stanford-Binet and Peabody Picture Vocabulary Test of 16 Children Taking Both Tests in Fall and Spring

	Juniors		Seniors	
	S-B	PPVT	S-B	PPVT
Fall	93	78	94	72
Spring	104	93	104	93

It is evident from Table 4 that there were substantial gains on both tests for both groups. The mean gain on the Stanford-Binet for the Juniors was 10.7 while for the Seniors, gain on the same test was 9.1. On the Peabody PVT, gains in estimated IQ's were even greater, i.e., 15.0 for the Juniors and for the Seniors, 21.5.

Tests of significance were made separately for gain on the Stanford-Binet and for gain on the Peabody PVT by pooling the scores of the Junior and Senior children. On the Stanford-Binet, $t=3.58$, significant at the .01 level and on the Peabody $t=6.73$, significant at the .001 level.

These gains in intellectual ability are very substantial. In the case of the Stanford-Binet the overall gain is comparable to that reported by the most successful preschool programs for culturally deprived children during their first year in the program. In the case of the Peabody, we are not aware of any previous program that has reported such large gains over such a brief period of time. In spite of this spectacular gain in vocabulary, it is worth noting that the Peabody IQ was still 11 points behind the Binet IQ on the average at the time of the spring testing. This parallels the findings of many other studies of culturally deprived children, including the findings of our study of graduates of the 1965 Head Start program to be presented in Part II of this report.

PART II

Follow-up Study of Children and Mothers in the Three Summer Head Start Programs and Comparison with Control Group Children and Mothers from the Same School Districts

The purpose of this part of our report is to attempt a rough evaluation of the three 1965 Tompkins County Head Start programs in terms of their effects on the mothers and children enrolled in the programs. The report is very limited in scope. We made no attempt to study the results of the medical and dental examinations received by the Head Start children, and only a very casual attempt to study changes in attitudes and practices of their mothers following the program. On the other hand we made a major effort to determine the effects of the program on cognitive and language abilities, and we made a considerable effort to investigate changes in personality and social development resulting from the program.

This part of the report (Part II) is divided into five sections: (1) ratings of personality and social behavior made by the children's teachers at the beginning and end of the summer program; (2) selection of 67 culturally deprived children to serve as controls for the 74 Head Start children; (3) evaluation of the Head Start program by mothers of the Head Start children; (4) gains made by the Head Start children from summer to fall on the Peabody Picture Vocabulary Test; and (5) comparison of Head Start and control children on the Peabody PVT, the Stanford-Binet, and the Metropolitan Readiness Test.

Ratings of Personality and Social Behavior by Head Start Teachers

Twice during the summer, in the second and the seventh weeks of the program, each of the five head teachers was asked to fill out a behavior inventory questionnaire for each of the children in her class. This rating schedule was constructed by consultants to the National Head Start Program and was used in all Head Start Child Development Centers during the summer of 1965. Raters were given the following instructions: "Please describe as accurately as possible how this child behaves by circling one of the four responses to each question: ++ (Very Much Like), + (Somewhat Like), - (Very Little Like), -- (Not At All Like). Please give a response to every item and base your response upon your personal observation and experience with the child." Following these instructions there were 50 items, upon which all 74 Head Start children were rated. (The number of cases for this analysis is one less than the number given in my progress report of 30 October, 1965. On closer examination of the Dryden data it turned out that one child had attended so infrequently that the teacher felt unable to rate his behavior.)

In preparing these data for analysis, the four response categories were each assigned a number (Very Much Like = 3, Somewhat Like = 2, Very Little Like = 1, Not At All Like = 0). Mean scores for both administrations of each item were calculated, and the difference between means for each item was found. Since a change for the better could occur with either an increase or decrease in mean score, each item was assigned an expected directionality in terms of our judgement as to the desirable direction of change. Following this, the items were ranked according to the amount of change in the appropriate (i.e., desirable) direction.

The results of this ranking can be found in Table 5. The first line for each item shows the number of children for whom the statement was rated as "Very Much Like," "Somewhat Like," etc. during the second week of the program. At the end of the line is the mean rating received by the 74 children on that item during the second week. The figures in the second line show the comparable data for the ratings made in the seventh week. Immediately below each pair of means is the difference between them, indicating the average amount of change on that item from the second to the seventh week of the program. For example, on the first item ("Is usually polite to adults: says "please," "thank you," etc.) there were 14 children rated "Very Much Like," 37 rated as "Somewhat Like," 10 rated as "Very Little Like," and 13 rated as "Not At All Like" by their teachers during the second week of the program. The mean for these scores was 1.70, according to the above mentioned weights given each answer. During the seventh week when the children were again rated, the frequencies were 27, 33, 8, and 6 from "Very Much Like" to "Not At All Like" and the mean was 2.09. Subtracting the first mean from the second gives an increase of .39 from the first rating period to the second. It should be noted that 48 of the 49 items used in this analysis changed in the direction considered desirable while one changed in the opposite direction. One item was not ranked in the analysis, because it was felt that the directionality of desirable change could not be clearly established.

In addition to being ranked, the items were placed into a rough content classification based on the following scheme:

1. Relations with others
   - 1a. Relations with Adults (N = 6)
   - 1b. Relations with Peers (N = 8)
2. Intellectual Development
   - 2a. Task Orientation (N = 10)
   - 2b. Expressive Freedom (N = 6)
3. Personal Development
   - 3a. Self-Esteem (N = 3)
   - 3b. Self-Reliance (N = 5)
   - 3c. Emotion Control and Adjustment (N = 11)

In Table 5, the assigned category can be found following each item. For example, the first item was thought to represent "relations with adults" so the number (1a) follows the statement of item 1.

Table 5

Rank Ordering of Items in Behavior Inventory, Showing Means Obtained in Each Administration, and Their Differences

Rank of Item According to Amount of Desirable Change	Item	Very Much Like	Somewhat Like	Very Little Like	Not At All Like	Mean
1.	Is usually polite to adults: says "please," "thank you," etc. (1a)	14	37	10	13	1.70
		27	33	8	6	2.09
						+.39
2.	Usually does what adults ask him to.(1a)	18	38	11	6	1.93
		33	32	7	2	2.30
						+.37

Table 5 (cont.)

Rank of Item According to Amount of Desirable Change	Item	Very Much Like	Somewhat Like	Very Little Like	Not At All Like	Mean
3.5	Seems disinterested in the general quality of his performance. (2a)	8 5	22 10	29 36	15 24	1.31 0.95 -.36
3.5	Sticks with a job until it is finished.(2a)	16 23	33 37	13 13	12 2	1.72 2.08 +.36
5.5	Talks eagerly to adults about his own experiences and what he thinks. (1a)	25 34	23 24	15 14	11 3	1.84 2.19 +.35
5.5	Calmly settles difficulties that arise without appeal to adults or others.(3b)	10 15	32 40	19 14	13 5	1.53 1.88 +.35
7.	Is reluctant to talk to adults; responds verbally only when urged. (1a)	9 3	14 9	29 35	21 28	1.15 0.81 -.34
9.0	Is usually carefree; rarely becomes frightened or apprehensive.(3c)	25 29	30 36	10 9	10 1	1.93 2.24 +.31
9.0	Is eager to inform other children of experiences he has had.(1b)	17 27	27 25	18 14	12 8	1.65 1.96 +.31
9.0	Responds to frustration or disappointment by becoming sullen,withdrawn,or sulky.(3c)	10 2	18 17	19 23	26 32	1.16 0.85 -.31
11.	Appears to trust in his own abilities.(3a)	18 22	33 40	12 9	11 4	1.78 2.07 +.29
12.	Does not need attention or approval from adults to sustain him in his work or play.(3b)	17 20	24 34	23 17	10 4	1.65 1.93 +.28
13.5	Is rarely able to influence other children by his activities or interests.(1b)	5 3	28 19	29 34	12 19	1.35 1.08 -.27
13.5	Is reluctant to use imagination; tends not to enjoy "make-believe" games.(2b)	7 2	18 11	33 42	16 19	1.22 0.95 -.27
15.5	Is jealous; quick to notice and react negatively to kindness and attention bestowed upon other children. (3c)	9 2	10 7	28 36	27 30	1.01 0.75 -.26
15.5	Demonstrates imaginativeness and creativity in his use of toys and play materials.(2b)	15 23	39 37	8 9	11 5	1.79 2.05 +.26
17.5	Works earnestly at his classwork or play; doesn't take it lightly.(2a)	22 32	37 33	8 7	7 3	2.00 2.25 +.25

Table 5 (cont.)

Rank of Item According to Amount of Desirable Change	Item	Very Much Like	Somewhat Like	Very Little Like	Not At All Like	Mean
17.5	Has a tendency to discontinue activities after exerting a minimum of effort.(2a)	12 7	18 13	34 42	9 13	1.45 1.20 -.25
19.5	Is sympathetic, considerate, and thoughtful toward others.(1b)	25 30	32 34	11 10	7 1	2.00 2.24 +.24
19.5	Asks many questions for information about things, persons,etc. (Emphasis here should be on questions prompted by genuine curiosity rather than bids for attention.)(2a)	17 22	24 27	15 13	17 12	1.56 1.80 +.24
21.5	Is constricted, inhibited,or timid; needs to be urged before engaging in activities.(2b)	9 6	19 10	22 33	24 26	1.18 0.95 -.23
21.5	Is generally a happy child.(3c)	26 34	34 34	9 6	3 0	2.05 2.38 +.33
24.5	Is easily distracted by things going on around him.(2a)	20 13	30 26	14 25	11 10	1.79 1.57 -.22
24.5	Defends or praises his own efforts.(3a)	11 13	23 31	22 19	17 12	1.38 1.60 +.22
24.5	Is very suggestible; lets other children boss him around.(3b)	9 3	15 16	33 35	16 21	1.23 1.01 -.22
24.5	Tries to figure out things for himself before asking adults or other children for help.(3b)	22 25	31 38	16 12	5 0	1.95 2.17 +.22
27.5	Likes to talk with or socialize with teacher. (1a)	34 39	22 24	12 8	5 2	2.16 2.37 +.21
27.5	Often will not engage in activities unless strongly encouraged.(2b)	10 8	21 9	29 43	14 14	1.36 1.15 -.21
29.	Doesn't like to be interrupted when engaged in demanding activities,e.g.,puzzles,painting, constructing things. (2a)	10 17	26 24	30 29	8 5	1.51 1.71 +.20
30.5	Is methodical and careful in the tasks that he undertakes.(2a)	17 19	30 38	17 11	10 7	1.73 1.92 +.19
30.5	Is often quarrelsome with classmates for minor reasons.(3c)	9 4	12 12	29 31	24 28	1.08 0.89 -.19
32.5	When faced with a difficult task, he either does not attempt it or gives up very quickly. (2a)	12 5	17 20	31 32	14 17	1.36 1.18 -.18

Table 5 (cont.)

Rank of Item According to Amount of Desirable Change	Item	Very Much Like	Somewhat Like	Very Little Like	Not At All Like	Mean
32.5	Is uncooperative in group activities.(1b)	7 4	16 15	31 29	20 26	1.14 0.96 -.18
34.5	Responds to frustration or disappointment by becoming aggressive or enraged.(3c)	7 5	11 9	32 30	24 31	1.01 0.84 -.17
34.5	Is lethargic or apathetic; has little energy or drive. (3c)	6 1	6 7	30 31	31 35	0.82 0.65 -.17
36.5	Is even-tempered, imperturbable; is rarely annoyed or cross.(3c)	23 25	30 34	14 12	7 4	1.93 2.07 +.14
36.5	Requires the company of other children; finds it difficult to work or play by himself. (3b)	9 10	21 13	32 36	11 15	1.38 1.24 -.14
39.0	Is confident that he can do what is expected of him. (3a)	20 23	33 34	13 14	8 4	1.88 2.01 +.13
39.0	Greatly prefers the habitual and familiar to the novel and the unfamiliar. (2a)	13 12	34 30	15 18	12 15	1.65 1.52 -.13
39.0	What he does is often imitated by other children. (1b)	10 17	30 26	20 18	13 13	1.51 1.64 +.13
41.5	Goes about his activities with a minimum of assistance from others.(3b)	21 22	35 38	12 14	6 1	1.96 2.08 +.12
41.5	Is wanted as a playmate by other children.(1b)	18 23	35 34	14 12	6 5	1.89 2.01 +.12
43.	Is unduly upset or discouraged if he makes a mistake or does not perform well.(3c)	6 3	17 19	35 34	16 19	1.18 1.08 -.10
44.	Approaches new tasks timidly and without assurance;shrinks from trying new things.(2b)	6 5	16 15	35 36	16 18	1.16 1.09 -.07
45.	Emotional response is customarily very strong; over-responds to usual classroom problems, frustrations and difficulties(3c)	8 11	14 7	30 31	22 25	1.11 1.05 -.06
46.	Often keeps aloof from others because he is uninterested,suspicious, or bashful.(1b)	6 5	11 6	26 36	31 28	0.89 0.84 -.05
47.5	Has little respect for the rights of other children;refuses to wait his turn, usurps toys other children are playing with,etc.(1b)	7 7	17 14	28 32	22 22	1.12 1.08 -.04

Table 5 (cont.)

Rank of Item According to Amount of Desirable Change	Item	Very Much Like	Some-what Like	Very Little Like	Not At All Like	Mean
47.5	Is excessive in seeking the attention of adults. (1a)	13 8	15 23	32 28	14 15	1.36 1.32 -.04
49.	Welcomes changes and new situations; is venturesome, explores, and generally enjoys novelty.(2b)	23 19	32 36	14 14	5 6	1.99 1.91 -.08
	Item Not Ranked					
	Insists on maintaining his rights;e.g., will not yield his place at painting, or at the carpentry bench, etc.; insists on getting his turn on the slide or in group games, etc.	18 20	16 21	26 22	13 11	1.53 1.68 +.15

This classification of items can be used to form some impression of the types of behavior that seemed to the teachers to show the greatest change during the program and the types of behavior that to them showed least change. Of the first 10 ranked items, 4 concern "relations with adults;" the others are scattered among several other categories. Since there are only 6 items on the questionnaire in the area of "relations with adults," it would appear that this is the area in which there was greatest change. In examining the last 10 ranked items, it can be seen that 4 of them are classified as having to do with "relations with peers," while the other 6 are scattered among several other categories. This suggests that the head teachers perceived less change on the average in peer relations than in the other characteristics dealt with on the Behavior Inventory.

There is a strange contrast between these results and those we reported in Table 2 of our October progress report. In that table "Getting along with other children" was the area in which most favorable change was reported by the Head Start teachers and assistant teachers. From a list of eight different possible areas of change "Doing what he's told" and "Finishing what he starts" were ranked seventh and eighth respectively. By contrast "Usually does what adults ask him to" ranks second in Table 5, and "Sticks with a job until it is finished" is tied for third place. Which set of results should we believe?

My own feeling is that the results presented in Table 5 are fairly trustworthy, while those presented in Table 2 of the progress report are not. The Table 2 results were derived from Question 19 of an Office of Economic Opportunity questionnaire called "Paid and Voluntary Worker's Evaluation of Operation Headstart." This questionnaire had 24 items dealing with all aspects of the program, and there was an excellent opportunity for a "halo effect" to influence the ratings on all eight sub-items of Question 19. (It will be remembered that on this same questionnaire all 16 head teachers and assistant teachers reported on Question 22 that they enjoyed their duties with Operation Head Start "a great deal" and on Question 23 that they looked forward "a great deal" to participating in Operation Head Start the following year.)

By contrast the ratings on the Behavior Inventory were made on a child-by-child basis. Favorable items were interspersed with unfavorable ones, and the complete set of second week ratings was collected several weeks before the seventh week set of questionnaires was distributed. We know that the five head teachers took these ratings very seriously, and two of them complained to us about the amount of time the ratings required.

It seems to me also that the amount of change reported in Table 5 is much more likely to be an accurate indicator of the amount actually occurring over a five week period than is the amount reported in Table 2 of the progress report. If we are to believe Table 2, the average child was either "Better" or "Much better" in every one of eight different aspects of behavior at the end of the program. By contrast, Table 5 indicated far more modest gains. In the area of greatest reported change, there were 13 more children at the end of the program than at the beginning for whom being polite to adults was said to be "very much like" them and 15 more for whom obeying adult requests was said to be "very much like" them. At the other end of the scale, there were three items on which gains were approximately balanced by losses: respect for the rights of other children, excessive seeking of adult attention, and enjoyment of change and novelty.

The overall picture on the Behavior Inventory is one of slight to moderate improvement in each one of the behavior areas. Five weeks gain in age seems too little to account for more than a tiny fraction of such improvement, so we should probably ascribe most or all of the improvement to the children's experience in the Head Start programs. This is the kind of improvement often reported for children during their first few weeks in kindergarten, so the question arises: Would the same improvement have occurred in September and October for these children if they had <u>not</u> attended the Head Start programs in the summer? Is the effect of Head Start merely to advance by two months a process of social and personality development that would otherwise have taken place when the child entered kindergarten? We cannot answer this question empirically, since we do not have any behavior ratings for the Head Start children in kindergarten, nor for the control group children in the same kindergarten classes.

On theoretical grounds I would argue that more social and personality development is likely to take place for these children in a seven week Head Start program than during the first seven weeks of kindergarten. The basis for this assumption is the more favorable adult-child ratio in the Head Start programs --- one head teacher and one assistant teacher for every 15 children, as contrasted with one teacher for every 25 children in a typical Tompkins County kindergarten. Even if the amount of favorable personality change were, on the average, exactly the same under the two sets of circumstances, I would argue that it is worthwhile to have it occur earlier for these children. Most of the Head Start children in Tompkins County entered kindergartens in which they were surrounded by children from middle class or stable working class families. Other studies have shown that under such circumstances the culturally deprived child is likely to be at a disadvantage in making a good impression on his peers and in competing with them for the teacher's attention. And the initial social handicap is likely to be self-perpetuating. If this line of reasoning is correct, an educational experience that reduces the initial social handicap of the lower class child at the time of kindergarten entry is likely, in at least some portion of the cases, to have desirable long-range consequences.

Mothers' Evaluations of the Head Start Programs

In February and March, 1966 we made an attempt to interview the mother of each Head Start child who was still residing in Tompkins County. Interviews were held at the child's home by arrangement with the mother if possible. If the child was not living with his mother, we interviewed the adult most familiar with the child during the period of the child's participation in the Head Start program. Nearly all interviews, however, were with the children's mothers. We were able to interview the mother, or mother-surrogate, of 29 of the Ithaca children, 26 of the Newfield children and 13 of the Dryden children. In many cases repeated call-backs were necessary to schedule the interview but in no case did we encounter a refusal. The mothers were asked a number of different questions about the Head Start program and the changes they thought they had perceived in their children as a result of the program.

The instructions for Section B of the interview schedule for the mothers were as follows: Now I'd like to ask you about _____'s (child's name) experiences in the summer program, and your opinion about this. The children went from (9 to 12, 9 to 1, or 9 to 4) and they were involved in a variety of activities during the day. Some of these activities are listed on this card. For each activity, there are four possible answers you might give to tell me your opinion of the activity. You might think the activity was very worthwhile, a little worthwhile, not worthwhile, or not at all worthwhile for your child.

Table 6 gives the results of this series of questions. For each type of activity listed, the number of mothers who thought the activity was very worthwhile, a little worthwhile, etc. is shown. There were no differences of any consequence in the parents' responses from one school district to another; consequently the answers of all 68 parents have been combined in Table 6. The items are arranged in order of popularity, beginning with the one for which there was the highest level of favorable response.

Table 6

Ratings of Program Activities by Head Start Mothers

Activities	Very Worthwhile	A little Worthwhile	Not Worthwhile	Not At All Worthwhile
F. They listened to records and played games with a group leader.	59	7	1	1
C. They played with creative material like crayons, paints, clay, and play dough.	58	9	0	1
E. The teacher read stories to them	57	8	2	1
G. They had juice, snacks, and lunch (lunch in Ithaca and Dryden only).	56	8	3	1
D. They looked at picture books and worked wooden picture puzzles.	55	11	1	1
I. They had a dental check-up.	55	5	6	2
H. They had a medical check-up.	53	5	8	2
A. They played outdoors on swings, in sandboxes, etc.	47	17	3	1
B. They played with indoor toys like blocks, trucks, dolls and dress-up clothes.	44	20	3	1

It is obvious from Table 6 that these mothers were nearly all enthusiastic about the Head Start program. There is an overwhelming preponderance of responses in the category "very worthwhile" and almost none in the category "not at all worthwhile." Actually all the responses in this last category were given by one mother of a child in the Ithaca program. With regard to the relative evaluation of different features of the programs, it is interesting to see that the highest ratings were given to activities involving creative materials, verbal interaction with teachers, or other forms of "intellectual and cultural enrichment." The medical, dental and nutritional aspects of the program were rated with almost equal enthusiasm as the creative activities. Slightly less popular with the parents were the activities in categories A and B which were, for the most part, things which would be possible for the children to engage in in their own homes.

The reader may be surprised at the number of parents who rated the medical and dental check-ups as "not worthwhile" or "not at all worthwhile" for their children. In almost every case these were children who had already had medical and/or dental check-ups during the past year. Tompkins County has an excellent network of public and private health services, and a substantial minority of the parents had been making use of them for their children before they were ever enrolled in the Head Start program.

Perceived Changes in the Children

In Section C of the interview mothers were asked about ways in which they thought their child had changed as a result of the program. The instructions stated "Now I'd like to ask if there were any ways in which your child has changed as a result of the program. On the back side of the card you now have, you can see eight ways in which (child's name) may have changed as a result of Head Start. After reading each statement, tell me if you think your child is much better, better, worse, much worse, or shows no change in that area." These eight items were exactly the same as the summary items filled out by teachers and assistant teachers at the end of the summer program on Question 19 of the Head Start Workers' Evaluation Inventory. The answers of the 16 teachers and assistant teachers were presented in Table 2 of my October 30 progress report and were discussed in a previous section of this report. The comparable answers of the 68 parents are given below in Table 7. The items are presented in the same order in Table 7 as they were in Table 2 in order to facilitate comparison of the mothers' impressions with those of the teachers. For the same reason we have expressed the results in percentage form.

Table 7

Mothers' Perceptions of Changes in Children as a Result of the Head Start Program

Category	Much Better	Better	No Change	Worse	Much Worse	No. of Respondents
1. Getting along with other children	26%	40%	31%		3%	68
2. Self-confidence	30%	35%	35%			68
3. Speaking ability	19%	31%	50%			68
8. Can do things on his own	37%	32%	31%			68
4. Everyday manners	21%	38%	34%	7%		68
7. Interested in new things	47%	38%	15%			68
6. Doing what he's told	7%	42%	44%	7%		68
5. Finishing what he starts	12%	32%	53%	3%		68

On all eight items in Table 7 far more parents reported favorable, rather than unfavorable, change in their children as a result of the Head Start program. Their estimates of the amount of change are more comparable to those reported by teachers in their child-by-child ratings (Table 5) than to those in the teachers' summary estimates on the Workers' Evaluation Inventory (Table 2). The proportion of mothers reporting that their child was either "Much Better" or "Better" as a result of the Head Start program ranges from a maximum of 85% (Interested in new things) to a minimum of 44% (Finishing what he starts), with a median of 62%. By contrast, 100% of the teachers and assistant teachers reported favorable change in Table 2 for five of the eight items. Again it seems to me that the child-by-child ratings provide a much better estimate of the amount of change that has actually occurred.

There are very substantial differences between Table 7 and Table 5 regarding the areas of maximum and minimum change. I believe that these differences reflect mainly differences in the opportunities for observation available to the head teachers in the summer of 1965 and those available to the parents over the period from July, 1965 to March, 1966. The area in which teachers reported greatest change, adult-child relations, undoubtedly refers to adult-child relations in the nursery school setting. We might expect changes in this area to carry over into the child's behavior in kindergarten, but probably not to his behavior at home. When mothers reported relatively little change on the item "Doing what he's told," they undoubtedly meant "Doing what he's told" by his mother!

It is intriguing to find that "Interested in new things" is the area in which parents reported greatest change, while the head teachers saw no change (on the average) in this respect. My guess is that we are dealing here with a "sleeper effect" --- a change in many of the children as a result of the Head Start program that does not become readily observable until the program is over. On the other hand, we must remember that all the children had been exposed to five months of kindergarten at the time their parents were interviewed, and that it is quite possible that many mothers gave the Head Start program credit for behavioral changes that really should have been attributed to the kindergarten experience.

The final possibility is that the changes reported in Table 7 represent merely the effects of six months physical and mental growth and six months of miscellaneous social experience, apart from the influence of any specific educational program. We could not present these questions to parents of control group children in the same way we did to the Head Start parents, so we have no solid evidence that the Head Start program plus five months of kindergarten was more effective in producing desirable behavioral change than two months at home plus five months of kindergarten. We are strongly inclined to attribute at least a portion of the changes reported in Table 7 to the Head Start experience, especially since there is a tendency for greatest change to be reported in some of the areas where we should expect greatest change on theoretical grounds (e.g., "Interested in new things"). However, we cannot be sure.

Mothers' Participation in Head Start Program Activities

Section A of the interview schedule asked parents about their participation in various kinds of activities related to the Head Start program. The three Tompkins County programs differed greatly in their approaches to parent involvement, so the findings in this part of the report will be presented separately by program.

In Ithaca there were three meetings scheduled for parents to meet with the teachers, and twenty-five mothers attended at least one of these meetings. No one attended all three, but 13 mothers went to two of them. As to what occurred at these meetings, 20 mothers reported that they were told about the program and what the school district wanted to do for the children, while 16 mothers remembered another meeting concerned with children's activities and how to discipline children. Twenty-two of the 25 mothers reported enjoying the meetings they went to and twenty considered the meetings at least moderately useful. Four Ithaca mothers also told of other activities: 3 had donated money for toys at a party and one had gone to the library with some mothers and a teacher.

In Dryden there were no organized group activities for the parents. One mother, however, reported visiting the classroom and said it was extremely useful and enjoyable. Also five of the thirteen mothers interviewed said they had talked with some staff member about their child and the program.

The Newfield program was distinctive in that there were field trips weekly. Mothers were invited to participate both to increase their understanding of the program and to make a better ratio of adults to children. Of the 26 mothers who were interviewed, 14 had gone on at least one trip; average attendance was five mothers per trip. Unanimously the mothers reported enjoying these field trips, and 12 of the 14 considered them at least moderately useful. The Newfield program also held a party at the end of the session at which 12 parents were present. Again they all reported they enjoyed the party. Newfield mothers who were not able to participate in any field trips were nevertheless impressed by their value for the children. A number of mothers commented spontaneously on the way in which their children had kept talking for days about experiences on one or another of these expeditions.

In all the programs some mothers had an opportunity to speak individually with one of the Head Start staff members about their children's activities and progress in nursery school. Twenty-three of the Ithaca mothers reported having talked with either the head teacher or one of the other staff members in their child's program. All but one said they enjoyed the talks; 19 found them at least moderately useful. In Dryden 5 of the 13 mothers spoke with a teacher about their children. Four mothers reported these talks were moderately useful, and all five said they enjoyed them. The reason so few Dryden mothers talked with a staff member was that most of the children lived 5 miles or more from the Head Start center and were picked up and returned daily by car-pools. In Newfield the children did not live so far away on the average; also the field trips provided an opportunity for mothers to talk with the teachers. Eighteen of the Newfield mothers said they talked with a staff member in the program about what and how their child was doing. Eleven mothers found these talks at least moderately useful while seven were not sure.

At the end of Section A all 68 mothers were asked whether there was anything special they thought they had learned as a result of the Head Start program. Only 14 answered "Yes" to this question. Eleven of these replies were from Ithaca mothers, six of whom reported that they learned how to deal more effectively with their child, and about available material for pre-schoolers. One Dryden mother and one from Ithaca learned

that there are many underprivileged children in the area, and that some mothers do little to help their children in educational activities. Three mothers reported they had never before realized that a child could learn so much at the age of 5 and two said they learned it is good to get out and do things in the community. Also one mother, from Ithaca, said she found out that children learn to fight at Head Start!

It is worth mentioning that all three Tompkins County Head Start programs were planned and administered entirely by public school personnel. Although the Dryden program was formally sponsored by the county chapter of the National Farmers Union, its administration was turned over entirely to the head teacher, an experienced and dedicated elementary school teacher (cf.,my October 30 progress report). This meant that these programs were conceived as downward extensions of the regular public school programs --- essentially as "pre-kindergarten" programs. The relationship of parents to the programs was thought of as analogous to the relationship of parents to an elementary school program. The goal of each program was to modify the child's abilities and characteristic behavior, not the parent's. Vigorous efforts were made to inform the parents of the nature and purpose of each program, but there was never any thought of asking parental advice on curriculum, equipment, or program activities. Nearly all the parents we interviewed accepted this definition of the situation and seemed to be satisfied with it. The only really dissatisfied parent was one Ithaca mother who for some reason had expected the program to prepare her child for entry into the first grade in September, instead of kindergarten. From this point of view she evaluated all the Head Start activities as "not at all worthwhile."

Selection of Control Group Children

We began a program of testing in the fall of 1965 that involved administration of the Stanford-Binet (Form L-M), the Peabody Picture Vocabulary Test (Form A), and the Metropolitan Readiness Test (Form A) to nearly all of the Head Start children still residing in one of the three school districts, as well as to a group of control children in the same kindergarten classes who were roughly matched with the Head Start children.

In selecting control children a rough attempt was made to replicate the selection method used in each school district for the Head Start children. Thus the Ithaca children were selected in direct consultation with the individual school principals and their kindergarten teachers; Newfield control children were selected in more informal discussions with teachers and the school nurse; and Dryden controls were selected in discussion with the supervising principal, who in turn discussed the children with kindergarten teachers in each of the schools.

The general request we made to kindergarten teachers and principals was to pick children who came from the same socio-economic level as the Head Start children but who had not been asked to participate in that program. In Ithaca we made a deliberate effort to make the proportion of Negro children the same in the control group as it had been among the Head Start children. Children were automatically eliminated from consideration as controls if (1) their parents had been approached by Head Start the previous summer and had refused, or (2) if they were kindergarten repeaters.

In the process of selecting control group children a decision was made to enlarge the number of controls in the Dryden school district beyond the number planned in the original project proposal. The reasons for this decision lie in the considerable discrepancy found between the actual Head Start programs in Newfield and Dryden. In Newfield 28 children had been enrolled in the Head Start program, although there were only about 75 children all told in kindergarten during the 1965-66 school year in this district. In the course of recruiting children for the Head Start program it was necessary to tap families of a considerably higher level of socio-economic status than in the Ithaca and Dryden programs (cf., my October 30 progress report). Thus our original intention of pooling the Newfield and Dryden data was abandoned. The great problem we encountered in Newfield was difficulty in finding poor kindergarten children who had not been approached to participate in the Head Start program.

We selected for the Newfield control group only the 14 children whom the teachers felt were of comparable socio-economic status to the 28 Head Start children. In Dryden the kindergarten population is about double that of Newfield; we therefore had the opportunity to select and test a larger number of control children than in Newfield, and we decided to take advantage of this opportunity.

Interviews with Control Group Mothers

In late May and early June of 1966 the mothers (or mother-surrogates) of the control group children were interviewed in a manner comparable to our previous interviews with the Head Start parents. Twenty-seven control children had been selected in Ithaca in the fall, 14 in Newfield, and 26 in Dryden. However, by late spring, when the parent interviews were carried out, only 57 of these families remained in Tompkins County: 22 in Ithaca, 12 in Newfield, and 23 in Dryden. All of these families were interviewed, and in most cases it was the child's actual mother who answered the questions.

Each mother was sent a preliminary letter asking her cooperation for a study of parents' reactions to the kindergarten program. They were told that their children had been selected from a list as representative of the larger group of kindergarten children, but they were not told that the interview had any reference to the Head Start program. The interview itself dealt in part with the parent's knowledge and opinion of the kindergarten program, in part with any perceived changes in her child due to kindergarten, and in part with the child's activities at home. A final section asked general questions about the family such as occupation, education, etc. The interviews went very smoothly, just as they had with the Head Start families. In many cases a number of visits were necessary to find the mother at home, but there were no refusals.

The following demographic information for the control families may be compared with similar information for the Head Start families given in the October progress report. (The data on race are the only ones we were able to obtain for the entire set of control children; all other data on the control families are based on the 57 whom we were able to interview in the spring of 1966.) Of the original 27 control children in Ithaca, 21 were white and 6 were Negro. Of those whose families were still in Tompkins County in May, 1966 and consequently available for interviewing, 19 were white and 4 were Negro. There were no Negroes in either Dryden or Newfield.

Probably the two best indices of socio-economic status for most purposes are education and income. Table 8 shows for Head Start and control families in each school district the median number of school years completed by mothers and the median gross family income during the previous year. Data for the Head Start families are taken from page 3 of the OEO Medical/Dental and Family Information Record, filled out during the summer of 1965. Data for the control families are taken from our interviews in the late spring of 1966.

Table 8

Mother's Education and Family Income of Head Start and Control Families

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
Median Number of School Years Completed by Mother	11.0	10.9	12.0	12.0	8.8	10.8
Median Gross Family Income During Previous Year	$3600	$5250	$5000	$6000	$3500	$5200

If we take mother's education as our criterion, we are led to the conclusion that the control families in Ithaca and Newfield are fairly well matched to the Head Start families, but the Dryden control families are somewhat superior to the Dryden Head Start families in socio-economic status. In gross family income, however, all three sets of control families are markedly superior to their Head Start counterparts. It seems to me that there are two considerations tending to invalidate family income as a suitable standard of comparison for Head Start and control families. The first is that the year for which income was estimated was 1964 for the Head Start families and 1965 for the control families. In Tompkins County 1965 was a year of virtually full employment, while 1964 was considerably spottier. The second consideration is that the 57 control families for whom data are presented in Table 8 are a subset of the 67 families from whom control children were drawn in the fall testing program. It is reasonable to suppose that the ten families who moved away during the school year were for the most part families whose incomes were proving extremely unsatisfactory and who hoped to do better elsewhere.

An additional criterion of socio-economic status, available for most of the families, is father's education. Table 9 shows the median number of school years completed by fathers of Head Start and control children. Information was provided by the mothers in nearly all cases. The figures in parentheses are the numbers of fathers for whom this information was available.

Table 9

Father's Education in Head Start and Control Families

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
Median Number of School Years Completed by Father	12.0 (28)	12.0 (16)	11.3 (27)	12.0 (12)	9.5 (15)	9.2 (23)

The data on father's education agree with the data on mother's education in suggesting a fairly good match between Head Start and control families. Only in Newfield do the control families seem to come from a slightly higher socio-economic level.

Our general conclusions on matching are twofold: (1) Parental education is superior to family income as a criterion, since it is not affected by year-to-year fluctuations in the economic situation. (2) By the criterion of parental education the Ithaca Head Start and control families were almost perfectly matched, while in Newfield and Dryden the control families appeared to come from a slightly higher socio-economic level than the Head Start families.

For the record we shall note some additional information about the control families. These data may be compared with the corresponding information in my October progress report. Of the 22 families in the Ithaca control group, 17 (76%) had fathers living in their homes. The majority of the fathers were craftsmen, foremen, or operatives; only 3 were laborers. Forty percent of the mothers had completed high school; median family size was six members.

Of the 12 Newfield control families, all had fathers living with them. Ten of the twelve fathers (83%) were craftsmen, foremen or operatives; only one was a laborer. Fifty-five percent of the the mothers had completed high school. Median family size was five members.

In the Dryden control families 22 out of 23 had fathers living in their homes. Of these fathers, the majority were craftsmen, foremen, or operatives and 6 (26%) were laborers. Of the mothers, 39% were high school graduates; median family size was five members.

The most noteworthy feature of these data is the somewhat smaller average size of the Newfield and Dryden control families as compared with the Head Start families in these districts. By contrast the median size of the Ithaca control families is exactly the same as that of the Ithaca Head Start families.

Tests of Language and Intellectual Abilities

Testing of the Head Start children began during the second week of the summer program with administration of the Caldwell Preschool Inventory. Gains on the Preschool Inventory from second to seventh week were presented in Table 3 of my October progress report. In the third and fourth weeks of the program all children were also given Form B of the Peabody Picture Vocabulary Test. Administration of the PPVT was done by James Schuh, who had spent the previous week giving the second half of the Preschool Inventory to these same children.

The next wave of testing began at the end of October and lasted considerably longer. The general plan was for two graduate assistants to work simultaneously with the Head Start and control children in Ithaca, then move to Newfield, and then to Dryden. Form A of the PPVT was to be used as a warm-up and followed by the Binet, in the same manner previously described for children in the Ithaca day care center. We took care to maintain approximate equality in the number of Head Start and control children tested by each graduate assistant in each school system.

The principal psychometrician was Gary Shaw, whose training has already been described in the section dealing with the Ithaca year-round program for 3 and 4 year olds. He was assisted by Maxine Bernstein, a graduate student in social psychology who had completed a general course in test administration and was given some intensive tutoring in the Stanford-Binet, Form L-M at the beginning of the fall. Analysis of the test results secured by Shaw and Bernstein revealed no systematic differences on either the Binet or the Peabody.

The testing program did not go smoothly in Ithaca, in spite of excellent cooperation by all of the various school administrators concerned with these children. It turned out that the Head Start children were dispersed among seven kindergarten classes in five different schools. Control children were selected from three of these schools. At the request of one of the Ithaca school psychologists we added the Bender Gestalt to our test battery, without realizing the extent to which this would slow us up. A graduate student in another department began administering Form B of the PPVT to kindergarten children in one of the schools without consulting us. We decided at first to omit the PPVT from our administration for the 12 children she had tested and to use her results instead. However when we got around to examining the data systematically, we found her scores were far out of line with those obtained by Shaw and Bernstein; so we had to retest seven Head Start and five control children with Form A of the PPVT in April, 1966.

The other discovery we made on systematic examination of our data was that we had somehow omitted to test in the fall one of the Ithaca Head Start children and two control children from the same classroom. These three children were tested in March, 1966.

With the exceptions previously noted, all Ithaca children available for testing had taken the Binet and Form A of the PPVT by mid-December, 1965. Testing in Newfield and Dryden went much more smoothly. In Newfield we began testing in early December and finished in January, while in Dryden we began in January and finished in February.

The final wave of testing took place in April and early May, 1966. It has been the custom in recent years for the Ithaca kindergarten teachers to administer the Metropolitan Readiness Test to their classes each spring, and we were able to use the results of their testing. Their test procedure is carefully supervised by the coordinator of elementary instruction for the district, and group size is limited to a maxumum of 15 children at any one time. In Newfield and Dryden Gary Shaw took responsibility for the testing, with the help of the various kindergarten teachers. Form A of the Metropolitan was used in each district. Nearly all the testing was completed in April, but several make-up sessions were necessary in early May for children who had been ill at the time of the original administration. The reduction in the size of our groups from fall to spring is almost entirely the result of migration of families out of the county.

Table 10 presents mean IQ's on the Peabody Picture Vocabulary Test for the Head Start children in July, 1965 and in the winter of 1965-66. As I explained in Part I of this report, the great advantage of the IQ as an index is that it provides an automatic correction for variations in children's ages at time of testing. The test results are broken down by head teacher within each Head Start program to facilitate comparison with Table 3 in the October progress report. Table 10 is based entirely on children who were tested both in the summer and the winter.

Table 10

Mean IQ's of Head Start Children on Peabody Picture Vocabulary Test in July, 1965 and Winter, 1965-66

	Ithaca		Newfield		Dryden	
	Miss A's Class	Mrs. B's Class	Mrs. C's Class	Mrs. D's Class	Mrs. E's Class	Total
July, 1965 (Form B)	86	84	78	91	80	84.2
Winter, 65-66	91	95	90	99	91	93.4
Mean Gain	5	11	12	8	11	9.2
Number of Cases	16	12	13	13	13	67

There is no doubt that Table 10 shows a substantial increase in PPVT IQ for the average Head Start child over a six month period. A test of significance for the overall increase of 9.2 points yeilds a t of 3.98, significant at the .001 level. There is a real question, however, as to how much of this increase should be attributed to the Head Start program and how much to the subsequent four months in kindergarten. The summer administration of the PPVT was in the third and fourth weeks of the Head Start program, so that children had on the average four weeks more of this experience before the program terminated. I shall argue in the next section of this report that these gains in PPVT IQ should be attributed almost entirely to the kindergarten experience rather than Head Start.

The gains are so similar from one class to another and from one school district to another that there is no point in testing the statistical significance of differences in mean gain. The differences are suggestive, however; and perhaps a little speculative interpretation is in order. There are two factors in the kindergarten situation which might be expected to produce greatest average gain in the Newfield children and least in the Ithaca children. The first of these is time of test administration. About three fourths of the Ithaca Head Start children took Form A of the PPVT in November and December and one fourth in March or April. The mean gain for the latter group of eight children is 21 points, while the mean gain for the former group is only 2 points. This argues very strongly for length of kindergarten experience as a decisive factor in size of IQ gain on the Peabody. From this standpoint the Ithaca children, taken as a whole, were somewhat handicapped by the timing of our 1965-66 program of individual testing.

The Newfield kindergarten program is an all day one, in contrast to the half day programs in Ithaca and Dryden. Presumably this provides an opportunity for more verbal and intellectual stimulation for the children over a four month period, and consequently might be expected to lead to somewhat greater increases in PPVT IQ.

Table 10 does show a noticeably greater average gain for the Newfield children as compared with the Ithaca children, as these considerations would predict. The district that is out of line is Dryden, with the highest average mean gain of the three in PPVT IQ. This suggests that there may have been something in the Dryden Head Start program leading to slightly greater verbal and cognitive development, on the average, than in the other two programs. The graduate assistants who observed the three programs were more impressed by Mrs. E's teaching style than by that of any other single teacher, and it was her group that showed the largest average gain during the summer on the Caldwell

Preschool Inventory. (See my October 30 progress report for a description of the Dryden program and results with the Preschool Inventory.)

In Table 11 are presented results of the fall and winter testing with the Stanford-Binet and PPVT for both Head Start and control children. The table includes two Head Start children who were absent at the time of the summer administration of the PPVT, and were consequently not included in Table 10.

Table 11
Mean IQ's of Head Start and Control Children on Stanford-Binet and Peabody PVT in Winter, 1965-66

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
Stanford-Binet IQ (Form L-M)	95	98	99	104	96	93
PPVT IQ (Form A)	93	92	94	98	91	85
Number of Cases	29	27	27	14	13	26

The main overall impression one gets from Table 11 is that there is no difference in average level of ability between Head Start and control children when both are tested half way through their kindergarten year. All of the mean differences between Head Start and control children are small; three of the comparisons favor the Head Start children, while three favor the controls. It seems to me that Table 10 with its associated test of significance demonstrated clearly that the Head Start children gained substantially in verbal ability over a six month period. Table 11 suggests very strongly, if not conclusively, that similar gains were simultaneously being registered by the control children. The major source of change for both groups is almost certainly the kindergarten program in the various Tompkins County schools.

The confidence we can place in these conclusions depends primarily on the adequacy of matching of the Head Start and control groups in each school district. In Ithaca all the evidence indicated adequate matching, and we find virtual identity in the average level of performance of Head Start and control group children. In Newfield we concluded that the control children probably were drawn from a slightly higher socio-economic level, on the average, than the Head Start children; and we see in Table 11 that their tested IQ's average four or five points higher than those of the Head Start children.

The only school system in which the difference between the Head Start and control children in winter test performance is opposite in direction to the difference in socio-economic status us Dryden. The data on parental education, as well as those on median family size, suggest that the average socio-economic level of Dryden control families was somewhat above that of Head Start families, just as in Newfield. But we find in Table 11 that the Dryden Head Start children score slightly above the control children, on the average, on both the PPVT and the Binet. The differences are only suggestive, but they are consistent with our previous results in pointing to the Dryden Head Start program as probably the most successful one in producing a lasting influence on the children's rate of intellectual growth.

Precise statistical treatment of the data summarized in Table 11 is best carried out by analysis of covariance. The fact that the proportion of Head Start and control children varies greatly from school district to school district creates a problem, but a good approximate solution is found in Yates' method of Weighted Squares of Means. We carried out such an analysis, using mother's education as the independent quantitative variable, and found no significant differences in group means on either Stanford-Binet IQ or Peabody IQ. The program we were using provided estimates of the average within-groups correlation between mother's education and child's IQ and provided them separately for the Head Start and control children. To our intense surprise these correlations differed drastically for the Stanford-Binet --- .50 with mother's education for the Head Start children, and -.12 for the control children. We assumed naturally that something had gone wrong with the computer program, so we checked the results with a desk calculator. Using total correlations --- all Head Start children together, and all control children together --- we find an r of .50 between Binet IQ and mother's education for 64 Head Start children, and a corresponding r of -.07 for 54 control children. This difference is significant at the .03 level, and I don't have the slightest idea what it means.

Correlations between PPVT IQ and mother's education were much more reasonable --- .38 for the Head Start children and .05 for the controls.

The final round of testing was carried out in April and early May, using Form A of the Metropolitan Readiness Test. Group means on this test are presented in Table 12.

Table 12
Mean Raw Scores of Head Start and Control Children on Metropolitan Readiness Test in Spring, 1966

	Ithaca		Newfield		Dryden	
	Head Start	Controls	Head Start	Controls	Head Start	Controls
Mean Raw Score on Metropolitan Readiness Test(Form A)	39	41	51	51	41	41
Number of Cases	(29)	(23)	(25)	(12)	(13)	(21)

The general trend of results in Table 12 is much the same as in Table 11. This is not surprising, since the Metropolitan Readiness Test is known to correlate highly with standard intelligence tests, especially the Binet. The main contrast between Table 12 and Table 11 is that on the Readiness Test differences between Head Start and control group means are entirely eliminated, while differences between school districts are increased. An analysis of covariance was carried out with these data similar to the one previously described for the data of Table 11. With Readiness Test scores as the dependent variable the differences between school districts become highly significant: $F = 5.91$, significant at .01 level.

It is obvious from Table 12 that it is the Newfield children who deviate from the others in their scores on the Metropolitan Readiness Test. My hypothesis is that two factors are working together to produce this result. The first is the somewhat higher socio-economic status of the Newfield Head Start and control children, taken together as compared with that of the Ithaca and Dryden children. This difference is quite clear in Table 8, and has been reflected in a tendency for the Newfield

children to attend at the top in most test comparisons, though not to a statistically significant extent. The second factor is the all day kindergarten program in Newfield. It seems reasonable to suppose that by the end of the school year the doubling of instructional time for these children might make a real difference, especially on a test such as the Metropolitan which is both an ability and an achievement test.

The correlation of the Metropolitan Readiness Test with mother's education is actually very low in our sample --- .12 for the Head Start children and -.01 for the control children. As a check on our previous calculations (or, more precisely, on the computer's previous calculations) we decided to do a simple one way analysis of variance of differences in Readiness Test scores by school districts. This time F turned out to be 8.07, significant at the .005 level. The very low correlation within groups between Readiness Test score and mother's education suggests that the main factor in the superiority of Newfield children on this measure is the Newfield kindergarten program rather than their slight advantage in socio-economic status. Whether the difference in Readiness Test scores at the end of the kindergarten year will be paralleled by differences in first grade achievement remains to be seen.

Summary and Conclusions

This report has dealt with only a few of the many different kinds of effects a Head Start program may have on children and parents involved in it. The clearest effects of the 1965 Tompkins County programs are to be found in the enjoyment of these programs by the children in them, and in the satisfaction of parents with the programs. It seems almost certain that the programs have laid a solid foundation for good parent-school relationships in coming years. It seems almost certain also that the medical and dental aspects of the program have made a real difference in the lives of a number of children, though our investigation did not attempt to assess these effects.

Whether the programs have had lasting effects on the children's social and intellectual development is much more difficult to estimate. Certainly the Head Start children have improved greatly, on the average, in these respects; and the improvement has lasted throughout most of their kindergarten year. The control group children, however, seem to have shown similar kinds of improvement. At the end of their kindergarten year their performance on tests of language and intellectual ability is extremely similar, on the average, to that of the Head Start children, and one may legitimately raise the question of how much the Head Start experience has added to what the children would have learned anyway in kindergarten. The present investigation does not have the precision required for even a tentative answer to this last question. All we can say is that we find the combined effects of the Tompkins County Head Start and kindergarten programs extremely impressive.